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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/730,413	12/08/2003	Xiang Liu	Liu 25-18-17-7	2453
46850	7590	12/07/2006	EXAMINER	
MENDELSON & ASSOCIATES, P.C. 1500 JOHN F. KENNEDY BLVD., SUITE 405 PHILADELPHIA, PA 19102			JEAN BART, RALPH	
			ART UNIT	PAPER NUMBER
			2613	

DATE MAILED: 12/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/730,413

Applicant(s)

LIU ET AL.

Examiner

Ralph Jean-Bart

Art Unit

2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/13/2005</u> . | 6) <input type="checkbox"/> Other: ____. |

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claim 1, 3, 11, 13, 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Futami et al (Pub. No.: US 2003/0002833).

3. With respect to claim 1, 11, 21, Futami converting an optical signal into an electrical signal having an amplitude corresponding to optical power of the optical signal (see figure 4 element 60); and sampling the electrical signal using a sampling window to generate a bit sequence corresponding to the optical signal (see figure 4 element 62), wherein: the sampling window has a width (see paragraph 0009); the electrical signal has a series of waveforms comprising first and second pluralities of waveforms, wherein each waveform of the first plurality represents a binary "0" and each waveform of the second plurality represents a binary "1" (see figure 4 element 62 which is generated binary 1 and 0); each waveform is integrated over the sampling window width to generate a corresponding bit value (see figure 4 element 64); and the sampling window width is selected to reduce contribution of the second plurality of waveforms into

integration results corresponding to the first plurality of waveforms (see paragraph 0056).

4. With respect to claims 3 and 13, Futami teaches the width of the sampling window is selected based on an eye diagram of the optical signal (see paragraph 0015 lines 10-17).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 4, 14, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Futami et al (Pub. No.: US 2003/0002833) in view of Gill et al (Pub. No.: US 2004/0151511).

8. With respect to claims 4, 14, and 23, all the limitations of these claims have been discussed in claims 1, 11, and 21. Futami fails to teach the optical signal is an optical duobinary signal.

9. However, Gill teaches the optical signal is an optical duobinary signal (see figure 2 duobinary transmitter 210).

Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to have

modified the Method and Device for Measuring the waveform of Futami by incorporating an optical duobinary signal.

The motivation for this modification in Futami is to provide an optical duobinary transmission for higher bit rate applications, which are practical, relatively less technically complex and are cost effective as taught by Gill (see Gill paragraph 0010).

10. Claims 5, 6, 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Futami et al (Pub. No.: US 2003/0002833) in view of Araki et al (US 6,839,130).

11. With respect to claims 5 and 15, all the limitations of these claims have been discussed in claims 1 and 11. Futami fails to teach generating a first clock signal based on the electrical signal; multiplying a frequency of the first clock signal to generate a second clock signal; and selecting the width of the sampling window using the second clock signal.

However, Araki teaches generating a first clock signal based on the electrical signal (see figure 1 section 50); multiplying a frequency of the first clock signal to generate a second clock signal (see figure 1 element Timing-signal generating circuit 606); and selecting the width of the sampling window using the second clock signal (see column 5 lines 58-63).

12. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to have modified the Method and Device for measuring the waveform of an optical signal of Futami by incorporating a first clock signal based on the electrical signal; multiplying a

frequency of the first clock signal to generate a second clock signal; and selecting the width of the sampling window using the second clock signal.

The motivation for this modification is to provide a plurality of clocks generating that generate sampling clocks which correspond to speeds of the return light of the respective wavelengths in order to supply the sampling clocks to the signal processing section as taught by Araki (see Araki column 2 lines 37-50).

13. With respect to claim 6, all the limitations of this claim have been discussed in claim 5. Futami fails to teach aligning the sampling window with respect to the waveforms based on the second clock signal (see column 5 lines 58-63).

However, Araki teaches aligning the sampling window with respect to the waveforms based on the second clock signal (see figure 1 element timing section 412 which is generated sampling clock to the A/d converter 412; see column 2 lines 50-67).

14. Claims 7, 10, 17, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Futami et al (Pub. No.: US 2003/0002833) in view of Brissette et al (Pub. No.: US 2004/0091273).

With respect to claims 7 and 17, all the limitations of these claims have been discussed in claims 1 and 11. Futami fails to teach the sampling window width is selected based on duty cycle corresponding to the second plurality of waveforms.

However, Brissette teaches sampling window width is selected based on duty cycle corresponding to the second plurality of waveforms (see figure 3C element 204 which the examiner interprets as a plurality of waveform).

Therefore, Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to have modified the Method and Device for measuring the waveform of an optical signal of Futami by incorporating sampling window width is selected based on duty cycle corresponding to the second plurality of waveforms in order to generate and perform a bit-bit of the corrected and uncorrected binary data signal.

With respect to claims 10, and 20, all the limitations have been discussed in claims 7 and 17 above. Futami fails to teach wherein the duty cycle is greater than one.

However, Brissette teaches a duty cycle which is greater than one (see figure 3A that shows a clock cycles equal to 510, and is greater than one duty cycle).

14. Claims 8 and 9,18,19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Futami et al (Pub. No.: US 2003/0002833), and Brissette et al (Pub. No.: US 2004/0091273) as applied to claim 7 above, and further in view of Lambropoulos et al (Pub. No.: 5,774,064).

15. With respect to claims 8 and 9, 18,19 all the limitations of these claims have been discussed in claim 7 above. Futami and Brissette fail to teach the sampling window width is less than about 25% of a bit length and the sampling window width is less than about 10% of a bit length.

However, Lambropoulos teaches a logic duty cycle which indicates to be 80% of the width of the window and a logic 0 which has a duty cycle of 20% of the window (see column 18 lines 51-51, and which the examiner interprets the window width is about a certain percentage of the bit length.

Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to have modified the Receiver Monitoring of Brissette, and the Method and Device For Measuring the waveform of an optical signal of Futami by incorporating a sampling window width is less than about 25% or 10% of a bit length in order to provide positive pulses for both logic 0 and 1, and further, in order to be easy to process and detect by the receiver.

16. Claims 2, 12, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Futami et al (Pub. No.: US 2003/0002833) in view of Solhjell et al (US 4780888).

With respect to claims 2, 12, and 22, all the limitations of these claims have been discussed in claims 1, 11, and 21 above. Futami fails to teach wherein for each waveform, the integration result is compared with a decision threshold value; wherein when the integration result is greater than or equal to the decision threshold value, the binary value is binary one; when the integration result is smaller than the decision threshold value, the bit value is binary "0"; and the decision threshold value is selected to reduce contribution of noise into the integration result corresponding to the first pluralities of waveforms.

However, Solhjell teaches wherein for each waveform, the integration result is compared with a decision threshold value (see column 2 lines 1-10, wherein the examiner interprets the binary data signals similar to a plurality of waveform); wherein when the integration result is greater than or equal to the decision threshold value, the binary value is binary one (see column 2 lines 7-10 in which the binary data signal is

compared with different threshold value); when the integration result is smaller than the decision threshold value, the bit value is binary "o" (see column 2 lines 7-10 in which the binary data signal is compared with different threshold value either a 1 or 0); and the decision threshold value is selected to reduce contribution of noise into the integration result corresponding to the first pluralities of waveforms (see abstract).

Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to have modified the Method and Device for measuring the waveform of an optical signal of Futami by incorporating an the integration result is compared with a decision threshold value; wherein when the integration result is greater than or equal to the decision threshold value, the binary value is binary one; when the integration result is smaller than the decision threshold value, the bit value is binary "o"; and the decision threshold value is selected to reduce contribution of noise into the integration result corresponding to the first pluralities of waveforms in order to provide a timer element which permits a timing signal that characterizes by an integration element at which the data signals are present as taught by Solhjell (see Solhjell column 2 lines 12-19).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ralph Jean-Bart whose telephone number is (571)270-

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1017. The examiner can normally be reached on Mon-Thurs 7:30-5:00PM; Fri 7:30-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on (571)272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RSB

Ralph Jean-Bart

11/22/2004


SUPERVISORY PATENT EXAMINER